

Benicia Arsenal Storehouses (Camel Barns)
and Engine House (Buildings Nos. 7, 8, 9)
Benicia Industrial Park
Benicia
Solano County
California

HABS No. CA-1946

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PHOTOGRAPHS

HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY

STOREHOUSES (CAMEL BARNS) AND ENGINE HOUSE HABS No. CA-1946
(Buildings Nos. 7, 8, 9)

Location:

Camel Court, Benicia Industrial Park, Benicia,
Solano County, California.

USGS Benicia Quadrangle, Universal Transverse
Mercator Coordinates:

Storehouse (Building No. 7): 10.576080.4211910
Engine House (Building No. 8): 10.576060.4211885
Storehouse (Building No. 9): 10.576040.4211860

Present Owner:

City of Benicia, 250 East "L" Street, Benicia,
California 94510

Present Occupants:

Building No. 7: City of Benicia
Building No. 8: Jerry Goss
Building No. 9: Wayne Carlson Wallpapers

Present Uses:

Building No. 7: Firing Range and Storage
Building No. 8: Artist's Studio
Building No. 9: Wallpaper Manufacturer

Significance:

Constructed of locally quarried sandstone, these three structures were among the earliest permanent buildings at the Benicia Arsenal. The storehouses were commonly known as Camel Barns, because they were supposed to have been used briefly in 1864 to house a herd of camels which the U.S. Government had attempted to introduce for military use in the American southwest.

PART I. HISTORICAL INFORMATION

A. Physical History

1. Date of erection: 1853-55. The report of the Secretary of War for the year ending June 30, 1854, noted: "A substantial storehouse 100 feet long by 40 feet wide, two stories high has been completed. Another storehouse of the same dimensions was commenced during the month of March 1854 by the order of Brevet Major General Wool, commanding the department of the Pacific, but was not completed for want of funds." In the report for the year ending June 30, 1855, this latter building was apparently finished because the report of that year noted "One stone storehouse 100 by 40 feet erected." The middle structure (No. 8)

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is not mentioned in these reports, but a drawing in the National Archives (See HABS No. CA-1946-8) is dated 1855. Each of the buildings carries an inscription date. These are 1853 for No. 7, 1855 for No. 8, and 1854 for No. 9.

2. Architect: None known.
3. Original plans and construction: See HABS No. CA-1946-8 for the architectural drawing of the Engine House (Building No. 8). The building was constructed in very close conformity to this plan, although the indicated interior partition no longer exists and new skylights have been added.

The two storehouses have apparently been used for a variety of functions. In a letter of November 18, 1857, the commanding officer at the arsenal, F. D. Callender, wrote that the function of the storehouse was to house gun carriages, but that because other buildings had not yet been completed they also had to function as storehouses for small arms as well as housing some of the men until more permanent quarters were constructed. The small building between them (No. 8) was labeled "Engine House" on the original drawing, "Guard House" on the 1856 map of the arsenal, and "Cartridge Bag Shop," with "Old Guard House" in parentheses, on the 1904 map.

4. Alterations and additions: The storehouses have not been significantly changed on the exterior. On the interiors, it appears that all of the wood framing is later than the original construction. This is plain in the second-floor areas, where holes for the original purlins are visible in the stone end walls but are not used because a new truss system was added in which the last truss was set immediately next to the stone walls and no tie-in with the gable was provided. A good description of these buildings at the turn of the century is included in Supplemental Information, below.

B. Historical Context:

These structures have long been associated with the extraordinary story of the herd of camels introduced by the U.S. Government for military purposes in the American Southwest. The camels were purchased in 1855, shortly before the Civil War. After a number of years of experimentation and conflicting reports about the usefulness of the animals, Quartermaster General E. B. Babbitt of Benicia was ordered in September 1863 to sell the herd, which then numbered some 35 camels. They were driven from southern California and reached Benicia in February, 1864. They were all sold to a man named Samuel McLenaghan, who had previously helped to care for them.

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It is doubtful that the camels were ever actually housed within the buildings; it seems more likely that they were kept in temporary corrals in the southern part of the arsenal. In the April 11, 1928, issue of the Benicia Arsenal Sentinel appeared an article with information supplied by a Mr. Caffrey, whose father was a member of the caravan that brought the camels to Benicia and who himself remembered the camel corral. Caffrey's account is corroborated by an apparently independent source of information published in another article the previous year.

Prepared by: Robert Bruegmann
Project Historian
Historic American Buildings Survey
August 1976

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: The building arrangement consists of one small building, the Engine House (Building No. 8), situated between two larger structures, the Storehouses (Buildings Nos. 7 and 9). The three buildings have fine stonework, with round-arched openings on the first floors.
2. Condition of fabric: Good.

B. Description of Exterior:

1. Over-all dimensions: The Engine House is one story with a cellar and measures approximately 28'x32'. The two Storehouses are two stories tall and measure approximately 100'x40'.
2. Foundation: Sandstone with watertable, now plastered.
3. Walls: Rusticated sandstone ashlar. The stones surrounding the round-arched openings project slightly. On the west sides of storehouses, a smooth stone beltcourse projects slightly.
4. Structural system, framing: Stone load-bearing walls with wooden roof framing. In the Engine House, the first floor is supported by concrete barrel vaults supported by an iron beam and three

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fluted iron columns. In the Storehouses, the trusses are redwood mortise-and-tenon with wood pegs and steel tie rods. End trusses are against end walls. The second-floor framing is wood beams and joists.

5. Porches, stoops, bulkheads, etc.: The Engine House has three iron grill steps from the stone sill to two concrete steps on the east side. A metal grill with wood frame covers an opening in the foundation wall that provides access to the cellar.

In the North Storehouse (Building No. 7), there is a concrete ramp at each door on the east side of the building. In the South Storehouse (Building No. 9), there is a wood bridge at the second floor on the south end. Supported by wood columns, it has a wood floor and simple wood handrail on each side. At the end is a two-rung ladder to the ground.

6. Chimneys: All three buildings have metal flues.
7. Openings:

- a. Doorways and doors: In the Engine House, the main entrance in the center of the west side is a large round-arched opening with stonework surround above the spring line. Inscribed in the keystone is "1855" and an ordnance symbol. The doorway has a pair of wood panel doors with glass in the top panel, four-light round-arched transom window, and wood surrounds. In the center of the east side is a small arched opening with double leaf iron doors and an iron transom panel.

The west sides of the storehouses have seven arched doors with accentuated stone surrounds above the spring line and a keystone with the ordnance symbol. On the north building, the doorways have been filled in with plywood, some of which have small doors. On the south building, four of the openings have windows with the rest of the area bricked up and the others have doors smaller than the openings.

The gable ends of the storehouses have doors at the second-floor levels. These too are large arched doorways with stone surrounds. The keystone of the south door of the north building is inscribed "1853" and the keystone of the north door of the south building is inscribed "1854." Wooden hoist members are above the end doors on the north building.

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b. Windows and shutters:

Engine House: There are two windows on each side of the doors on the east and west sides. These windows are arched with stonework surround from spring line of arch and have eight-light, fixed sashes with two-light transom windows, wood surrounds, stone and wood sills. The window south of the east door has the surround plastered flush with stone arch work and has an iron shutter over it. The windows have splayed plaster jambs inside and the sill is at floor level.

North Storehouse: At the first floor of the east side are four-over-four-light single-hung sash windows with an arched two-light transom window, wood surrounds, wood sill on the interior and stone sill on the exterior. Large stones form a decorative arch on the exterior. The jambs are deeply recessed and plastered. These windows are boarded up on the exterior. The seven second-floor windows on the east side are eight-light fixed sash, wood sill and lintel inside, wood surrounds, stone sill and lintel outside. Iron hinges are on the exterior face of the building, both floors, at each jamb where shutters have been removed.

South Storehouse: On the first floor of the east are five ten-light, fixed-sash arched windows with stone sills, accentuated stone arches on the exterior, splayed plastered interior jambs and wood surrounds. The two end windows have double-hung sash. Windows on the first floor in the brick at the west side are eight-light fixed wood sash, brick sill and wood surrounds. One top light panel in each is a metal louver panel. Five of the second-floor windows on the east side have eight-light fixed wood sash, wood surrounds, splayed stone jambs, stone sills and lintels. Two windows have four-over-four-light double-hung wood sashes. Iron hinges are on the exterior of the second-floor windows where shutters have been removed.

7. Roof:

- a. Shape, covering: The three buildings have gable roofs covered with corrugated sheet metal. The ridges run north-south on the Storehouses and east-west on the Engine House. The south slope of the Engine House roof has two acrylic-covered skylights.
- b. Cornice, eaves: On the Engine House, the overhanging gable ends are metal-covered as is the fascia board. There is an overhang on the south side of the building with metal-covered soffit and fascia. There is a metal-covered barge board on the gable ends.

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On the Storehouses, the eaves are boxed and extend around the gable ends approximately 4'. The gable eave is boxed and a wide band of wood siding forms a barge board. At the apex of the barge board, a second set of wood siding, running parallel to the floor line, is across the barge board. There is a metal gutter running the full length of each facade and downspouts on each corner.

C. Description of Interior:

1. Floor plans:

- a. Cellar: There is a cellar under the Engine House. It has a dirt floor and stone walls.
- b. First floor: The Engine House is one large space. In the North Storehouse, the west half of the interior is used as a firing range. Behind a plastered stone wall, the east half is used for storage. There is a row of large wood columns down the center of the storage room. Near the center of the building is an early freight elevator. The South Storehouse is essentially a large space with small rooms partitioned out of it. Near the center is an elevator and down the center lengthwise is a series of arched openings.
- c. Second floor: The second floors of both Storehouses are one large space, with lofts above.

2. Flooring: The Engine House has linoleum floors. The North Storehouse has a concrete first floor and wooden second floor. The South Storehouse has wood board floors.

3. Wall and ceiling finish: All of the stone walls are plastered and painted. The roof structures are exposed. In the South Storehouse, the partitions are vertical wood siding and the ceilings of the small rooms are wood boards.

4. Doorways and doors: The interior doors in the Storehouses are wood panel with wood surrounds.

5. Mechanical equipment:

- a. Heating: Space heaters.
- b. Lighting: Industrial-type fluorescent and incandescent lighting.

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- c. Plumbing: Modern plumbing has been installed in the South Storehouse.
- d. Elevator: In the North Storehouse, the elevator is an open front with wood gate. The side walls are wood covered with galvanized iron. The rear wall is vertical wood siding and the top is plywood. The opening is surrounded by four large wood columns.

In the South Storehouse, the elevator is an open front with wood gates, opening on opposite sides, first and second floors. The elevator is enclosed with plywood, painted, and surrounded by four large wood columns.

- e. Windlass: There is a wooden windlass suspended from the truss on the second floor of the North Storehouse. It is not in use.

D. Site:

The buildings face west, surrounded by asphalt paving with natural vegetation beyond. At the east side of the South Storehouse is a small storage building attached, a small wood storage building sitting away from the building, and an elevated water tank about 50 yards to the east. The buildings are within the industrial park.

Prepared by: John P. White
Project Supervisor
Historic American Buildings Survey
June 1976

PART III. SOURCES OF INFORMATION

- A. Architectural Drawing: "Plan and Elevations of an Engine House, Benicia Arsenal, 1855." Blue ink with yellow and black watercolor. Handwritten notation: "Benicia Arsenal Cal. Jan. 21st. 1855. Signed Chas. P. Stone." Contains a front (west) elevation, plan, and side (south) elevation, including a section of the cistern underneath the building. National Archives, Cartographic Division, Record Group 156, Folder 3. See HABS No. CA-1946-8.

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B. Early Views:

Photograph showing the buildings from the southeast. Undated U.S. Army photograph. Location of original unknown; included here as HABS No. CA-1946-7. This photograph must predate 1922 since it shows the old Barracks parade grounds in the distance.

Photograph showing the storehouses and the Barracks parade ground from the south. National Archives, Cartographic Division, Record Group 156, Folder 4. Reproduced in Josephine W. Cowell, History of Benicia Arsenal (Berkeley, ca. 1963), p. 69. See HABS No. CA-1773-1 through -4. The original photographic print at the National Archives is in a very deteriorated condition. A written legend reads: "My home and we are all standing by the piazza but it is too dark and small. I fear you can not see us. 'I' Captain Calinder's room." Captain Callender was the commanding officer at the arsenal between 1856 and 1860, so it is likely that this photograph dates to that period. The buildings shown in this view are indicated on an 1856 map of the arsenal.

C. Supplemental Information:

From "Report on the Capacity for Storing and Distributing Ordnance Stores and Facilities for Manufacture and Repairs at the Benicia Arsenal," Report of the Secretary of War, U.S. Congress, House Documents, 56th Congress, 1st Sess., 1899, Serial Vol. 3911, pp. 547-548.

The north storehouse is 99 feet long and 39-3/4 feet wide with two stories. This is a stone building with a longitudinal division wall of stone in the basement. The west side of the basement is fitted up with blinds after the fashion of a timber storage shed for which it was probably intended. It is now, however, used for storage of such materials as will not be damaged by dust or dampness. The east side of this can be used for any kind of material. The second story is without a partition and is a good and dry storehouse. The area for storage on this floor is about 3,100 feet; for the lower floor about 1,400 feet on the east side. There is a hand-power hoist in this building.

The south storehouse is a building of the same material and dimensions as the north storehouse. The partition wall in the basement is not continuous as in the north storehouse, but is arched so that the basement contains a series of openings throughout. The basement story is provided with blinds instead of sashes and shutters. These blinds have the wind free to enter, and doubtless the basement was intended for the storage of timber. It is now

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utilized in part for the storage of wooden field carriages and caissons, and could not be used without some alteration for the storage of ordnance material in general. The capacity of the second floor is about 3,100 feet.

PART IV. PROJECT INFORMATION

This project was undertaken by the Historic American Buildings Survey in cooperation with Exxon Company, U.S.A. (a division of Exxon Corporation) and the Benicia Historical Society. Under the direction of John Poppeliers, Chief of H.A.B.S., the project was completed during the summer of 1976 at the Historic American Buildings Survey Field Office, Benicia, California, by John P. White (Assistant Professor, Texas Tech University), Project Supervisor; Robert Bruegmann (University of Pennsylvania), Project Historian; Kenneth Payson (Cornell University), Architect; and student assistant architects Scott Barnard (University of Pennsylvania); James L. Cook (Texas Tech University); and Gary A. Statkus (University of Illinois, Urbana-Champaign). The written data were edited by Alison K. Hoagland in the HABS Washington office in January, 1981.